

Notice of Allowability

Application No.

10/805,670

Examiner

David Nhu

Applicant(s)

HOFMANN ET AL.

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/22/06.
2. ☒ The allowed claim(s) is/are 18-37.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____



EXAMINER'S AMENDMENT

1. Applicant's election of claims **20-37** is acknowledged. Because Applicant did not distinctly and specifically point out the supposed error in the restriction requirement,

the election has been treated as an election without traverse (MPEP § 818.03(a)).

Applicant have the right to file a divisional application covering the subject matter of the non-elected claim 38.

The traversal is on the ground(s) that see the election paper. This is not found persuasive because the fields of search for method' and device claims are NOT coextensive and the determinations of patentability of method and device claims are different, that is process limitations and device limitations are given weight differently in determining the patentability of the claimed inventions. Also, the strategies for doing text searching of the device claims and method claims are different. Thus, separate searches are required.

The requirement is still deemed proper and is therefore made **FINAL**.

2. An examiner's amendment to the record appears below. Should the change and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Cancel claims 1-19, 38.

Claim 1, "wherein through the second gate electrode an electrical charge transmission of the multiple tunnel barrier arrangement can be controlled" should be -- wherein through the second gate electrode an electrical charge transmission of the multiple tunnel barrier arrangement is controlled-- Because "**can**" should not use in the claim.

REASONS FOR ALLOWANCE

3. Claims 20-37 are allowed.
4. The following is an examiner's statement of reasons for allowance: None of the references of record teaches or suggests a cited in claims 20, 35: forming a first trench structure in the layer system, the first trench structure having first trenches arranged parallel to one another and extending as far as the first electrically insulating layer; forming a second trench structure in the layer system, the second trench structure having second trenches arranged parallel to one another and extending as far as the first electrically insulating layer, the second trenches being arranged perpendicular to the first electrode; forming, in the first and second trench structures, a first gate electrode adjacent to the floating gate through which first gate electrode electrical charge is fed or dissipated from; and forming, in the first and second trench structures, a second gate electrode adjacent to the multiple tunnel barrier arrangement, wherein through the second gate electrode, an electrical charge transmission of the multiple barrier arrangement is controlled (as cited in claim 20); A method for operating a semiconductor memory element arrangement having a first electrically insulating layer formed on a substrate and a layer system comprising a floating gate and a tunnel barrier arrangement formed on the floating gate, the layer system being formed on the first electrically insulating layer and forming a multiple tunnel barrier, wherein first and second gate electrodes are formed in a first trench

structure formed in the layer system, the first trench structure including first trenches arranged parallel to one another and extending as far as the first electrically insulating layer, and a second trench structure formed in the layer system, the second trench structure including second trenches arranged parallel to one another and perpendicular to the first trenches and extending as far as the first electrically insulating layer, the method comprising: reading an electrical potential on the floating gate via the first gate electrode; and controlling an electrical charge transmission of the tunnel barrier arrangement via the second gate electrode (as cited in claim 35).

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

CONCLUSION

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Noble et al (5,973,356): Ultra High Density Flash Memory.

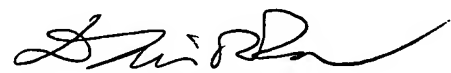
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Nhu, (571)272-1792. The examiner can normally be reached on Monday-Friday from 7:30 AM to 5:00 PM.

The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

David Nhu



January 19, 2007

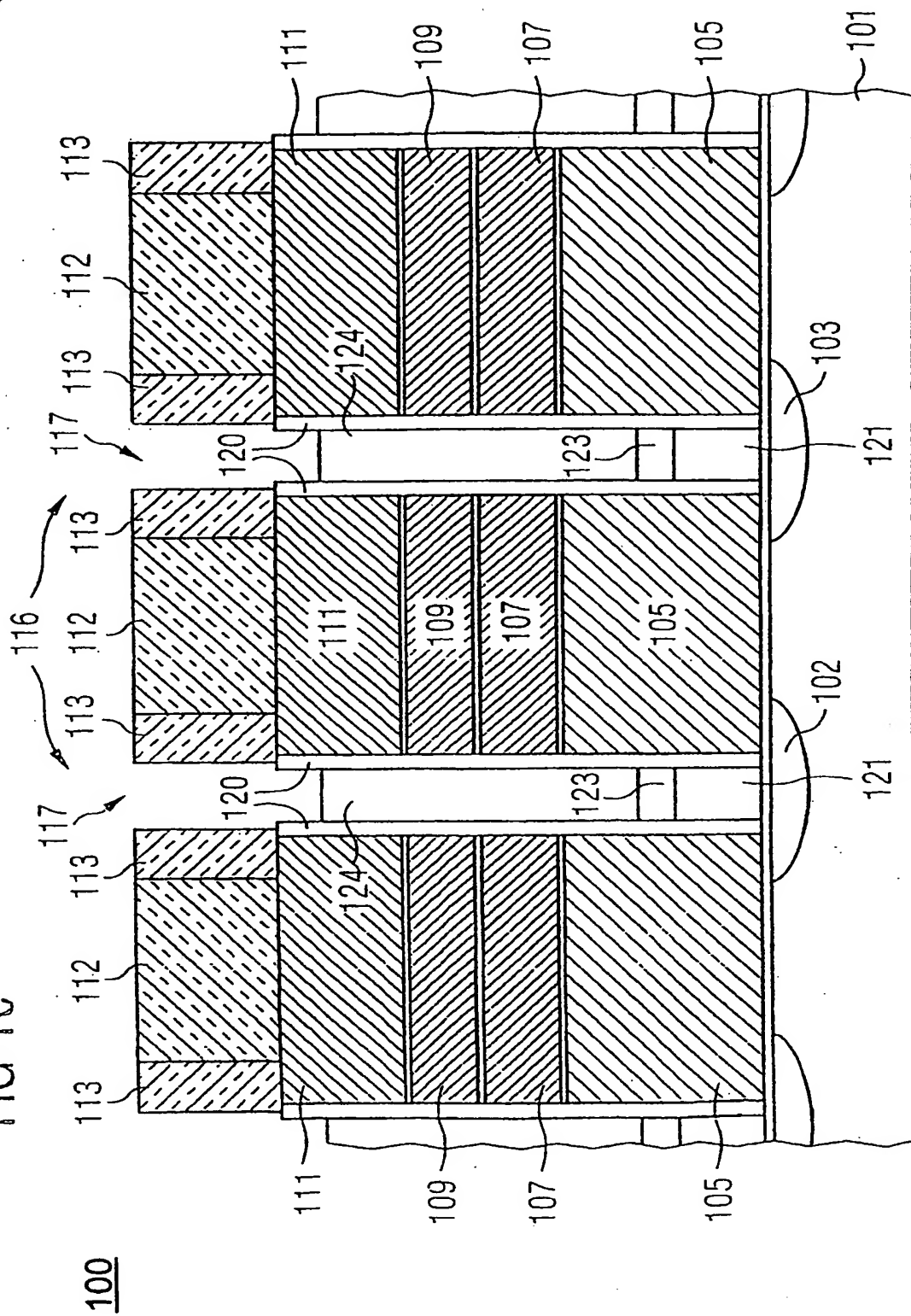


DAVID NHU
PRIMARY



Appendix

FIG 1e



approved

FIG 2e

